

IN THE ABSTRACT:

A waveguide includes a waveguide core that has a bottom surface and a top surface that defines an angle. The waveguide also includes a cladding layer adjacent to the bottom surface. The cladding layer has a thickness equal to or greater than an evanescent tail of a mode to be transmitted along the wave guide core.

~~A waveguide including a waveguide core having a top surface that defines an angle. A waveguide can include a waveguide core offset from a substrate by a cladding layer. A phototransistor includes an emitter, a collector, and a base in lateral alignment. A photodiode includes n- and p-type regions and an intrinsic substrate portion in lateral alignment. A waveguide includes a waveguide core, an attenuating layer, and a detector layer. A method for fabricating a device includes forming a cladding layer over a substrate having a detector layer formed thereon; forming an opening in the cladding layer to expose the detector layer; forming a waveguide layer over the cladding layer and the opening; removing a portion of the waveguide layer to define a waveguide core; and implanting first and second regions into the detector layer proximate the waveguide core.~~